Alpha
Consulting Engineers Pte Ltd

PROJECT QUALITY PLAN

PROPOSED DEVELOPMENT OF A POLYCLINIC & KIDNEY DIALYSIS CENTRE AT TAMAN JURONG, SINGAPORE

For

MOH HOLDINGS PTE LTD

Copy No.	1

Prepared By : Lim Chai Hoon / Chuan Kian Heng / Benedict Lim / Ching Mun Chung

Authorised By : Loh Fook Yuen

Date : 15 December 2023

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SECTION 1

QUALITY PLAN CONTROL AND DISTRIBUTION

1.1 List of Copy Holders

Copy No.	Copy Holder	Date of Issue
1	6336-PQP	15 December 2023

1.2 Revision Record

Revision	Date of Issue	Section Reference	Page(s)	Remarks
0	15 December 2023	1 to 11	30 pages	+ 2 pages (Section 4.1 – Overall Programme)

SECTION 2

PROJECT INFORMATION

2.1 Project Description

Type of Development	Polyclinic & Kidney Dialysis Center

Statistics of Development	
Site Area, m²	4,800
Nett Floor Area, m²	-
Gross Floor Area, m²	8,530
Covered Carpark, m²	-
No. of Covered Carpark Lots	57
No. of Apartments/Houses	NA
No. of Beds (for Hospitals)	NA
No. of Guestroom (for Hotels)	NA
No. of Blocks / No. of Storeys	5 storeys
Green Mark Category	Platinum SLEB
No. of Phases	1

2.2 Project Cost

M&E Services Cost Plan (S$ x 1M)										
Services	EI	ACVI	LEI	FFAI	PSI					
Estimate	15.6									
Awarded	-	-	-	-	-					

Total Project Construction Cost (S$ x1M)			
	Site Clearance	Piling Works	Main Contract
Estimate	-	-	52
Awarded			

Site Clearance shall include earth work, soil improvement, service diversion and termination.

2.3 Scope of Works

2.3.1 Scope of Consultancy Services

Conceptual/Schematic Design	✓
Detailed Design	✓
Tender Documentation	✓
Tender Evaluation	✓
Contract Supervision	✓
M&E Costing	✓
Submissions to Authority	✓

(✓*where applicable*)

2.3.2 Scope of M&E Services

ELECTRICAL	✓	AIR CONDITIONING	✓	SPRINKLER	✓	SANITARY	✓	SWIMMING POOL	
LIFT	✓	MECHANICAL VENTILATION	✓	FIRE ALARM	✓	COLD WATER	✓	STEAM BOILER	
ESCALATOR		MECHANICAL SMOKE EXTRACT	✓	HOSEREEL	✓	HOT WATER		FUEL STORAGE	
PABX		COMPUTER A/C		WET RISER		TOWN GAS			
SECURITY	✓	BST CARPARK EXH		DRY RISER	✓	LPG GAS			
TELELIFT		HEATING				MEDICAL GAS			
DATA COMM.	✓								
FLUSHFLOOR TRUNKING									

(✓*where applicable*)

2.3.3 Submission to Relevant Authorities by Others

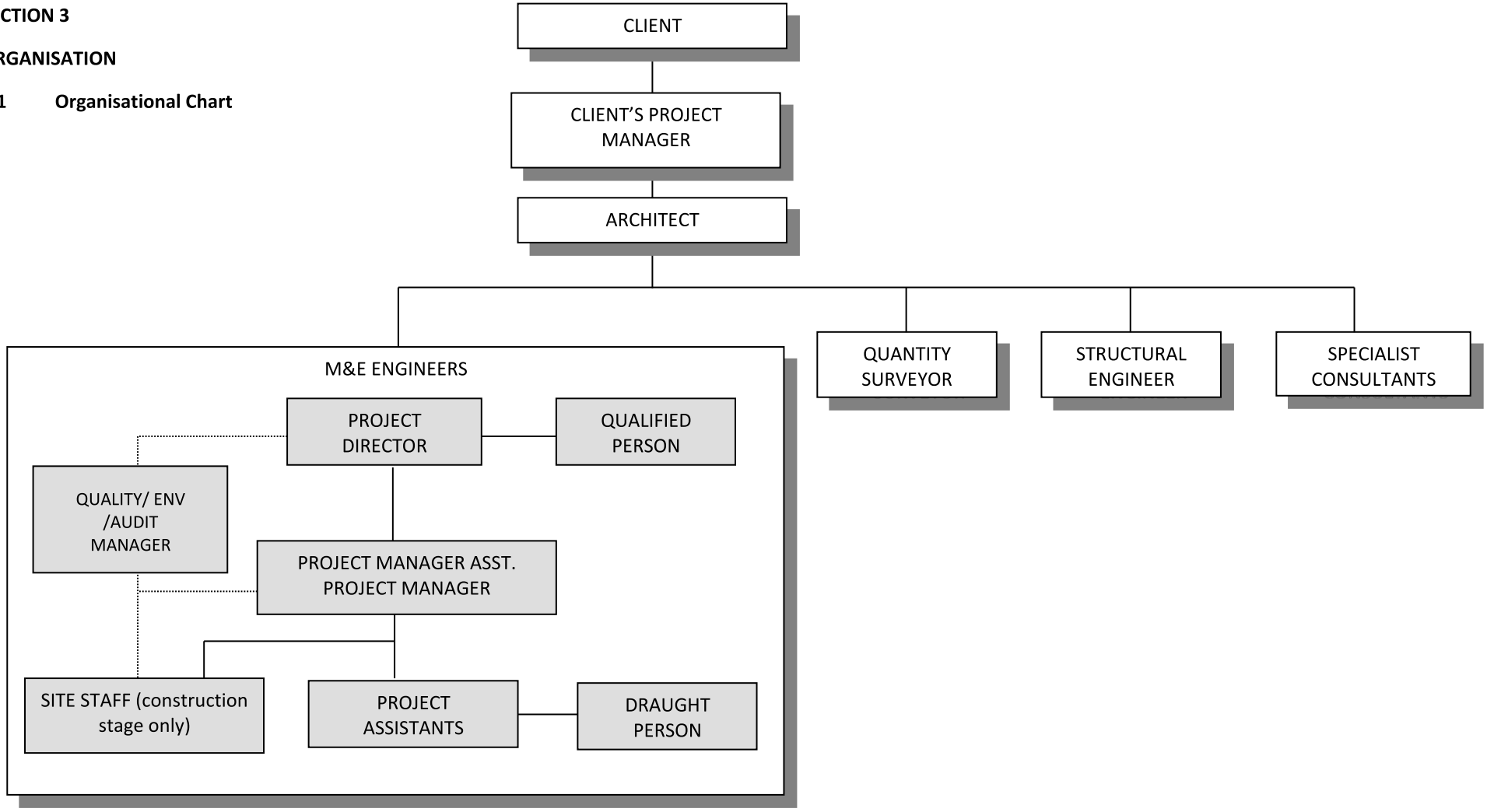
EJECTOR & DIVERTER		SUMP PUMP		FUEL OIL TANK		LIFT & ESCALATOR	✓	PRESSURE VESSEL		HOISTS		FOAM	

(✓*where applicable*)

SECTION 3

ORGANISATION

3.1 Organisational Chart



SECTION 3

ORGANISATION

3.2 ACEPL's Project Team Member

TITLE		NAME
Project Director		Loh Fook Yuen (LFY)
Qualified Person	Mechanical	Choong Choon Guan (CCG)
	Electrical	Loh Fook Yuen (LFY)
Project Manager		Lim Chai Hoon (LCY)
Assistant Project Manager		Chuan Kian Heng (CKH)
Project Assistant (Mech)		Ching Mun Chung (CMC)
Project Assistant (Elect)		Lim Sheng, Benedict (LSH)
Draughtsperson		Common Pool
Resident Engineer (M&E)		-
Assistant Resident Engineer (M&E)		-
Clerk-of-Work (M&E)		-

3.3 Client/Client's Representatives

Client: MOH Holdings Pte Ltd

Address: 1 Maritime Square (Lobby C) #11-25 HarbourFront Centre
Singapore 099253

Tel: 6622 0980

Fax: 6720 0980

Client's Representatives:-

Name of Company	Contact Person	Contact
MOH Holdings Pte Ltd	Name: Ms Wong Li Ling Position: Assistant Director	Tel: 6622 0998 Fax: – Handphone: 9845 5080 Email: liling.wong@mohh.com.sg
	Name: Ms Claudia Seah Position: Senior Executive	Tel: 6622 0735 Fax: – Handphone: 9624 6856 Email: claudia.seah@mohh.com.sg
	Name: Position:	Tel: Fax: Handphone: Email:
	Name: Position:	Tel: Fax: Handphone: Email:
	Name: Position:	Tel: Fax: Handphone: Email:

3.4 **Other Consultants** (Local)

Function / Name of Company	Contact Person	Contact
Architect DP Architects Pte Ltd	Name: Mr Chin Thoe Chong Position: Director	Tel: 6829 5998 Fax: 6337 9989 Handphone: 9670 0376 Email: chinthoechong@dpa.com.sg
Quantity Surveyor Surbana Jurong Consultants Pte Ltd	Name: Ms Ng Bee Har Position: Director	Tel: – Fax: – Handphone: 9669 4020 Email: beehar.ng@surbanajurong.com
Structural Engineer Meinhardt (Singapore) Pte Ltd	Name: Mr Kam Mun Wai Position: Senior Executive Director	Tel: 6377 9200 Fax: 6274 0788 Handphone: 9783 8277 Email: munwai.kam@meinhardtgroup.com
Planning & Construction Manager DP Architects Pte Ltd	Name: Mr Leonard Cheok Position: Associate Director	Tel: 6828 7869 Fax: – Handphone: 9176 0699 Email: leonardcheok@dpa.com.sg
Interior Designer DP Architects Pte Ltd	Name: Mr Chin Thoe Chong Position: Director	Tel: 6829 5998 Fax: 6337 9989 Handphone: 9670 0376 Email: chinthoechong@dpa.com.sg
Acoustic Consultant CCW Associates Pte Ltd	Name: Mr Cheah Beng Kin Position: Managing Director	Tel: – Fax: – Handphone: 9818 2289 Email: bengkin@ccw.com.sg
Security Consultant Beth-El (Asia Pacific) Pte Ltd	Name: Mr Wesley DÁranjo Position: Managing Director	Tel: 6459 5853 Fax: 6451 6968 Handphone: 9633 0912 Email: wesleyd@beth-el.com.sg
Environmentally Sustainable Design Consultant Building System & Diagnostics Pte Ltd	Name: Tan Phay Ping Position: Managing Director	Tel: 6560 0702 Fax: 6795 0020 Handphone: 9878 6876 Email: tanpp@bsd.com.sg
Design for Safety Professional Wecreate Studio	Name: Ms Trecia Lim Position: Principal Architect	Tel: – Fax: – Handphone: 9628 9744 Email: wecreatestudio@outlook.com
Traffic Consultant Ramboll Pte Ltd	Name: Mr Ray Krishna Position: Director	Tel: – Fax: – Handphone: – Email: ray.k@ramboll.com

3.4 Other Consultants (Overseas) – **NOT APPLICABLE**

Function / Name of Company	Contact Person	Contact
Architect	Name: Position:	Tel: Fax: Handphone: Email:
M&E Consultant	Name: Position:	Tel: Fax: Handphone: Email:
Quantity Surveyor	Name: Position:	Tel: Fax: Handphone: Email:
Structural Engineer	Name: Position:	Tel: Fax: Handphone: Email:
Interior Designer	Name: Position:	Tel: Fax: Handphone: Email:
Lighting Consultant	Name: Position:	Tel: Fax: Handphone: Email:
Acoustic Consultant	Name: Position:	Tel: Fax: Handphone: Email:
_____	Name: Position:	Tel: Fax: Handphone: Email:

3.5 Contractors/Sub-Contractors – NOT APPLICABLE

Function / Name of Company	Contract *	Contact Person	Contact
Main Contractor		Name: Position:	Tel: Fax: Handphone: Email:
Air Conditioning & Ventilation Installation Sub-Contractor		Name: Position:	Tel: Fax: Handphone: Email:
Plumbing & Sanitary Installation Sub-Contractor		Name: Position:	Tel: Fax: Handphone: Email:
Electrical Installation Sub-Contractor		Name: Position:	Tel: Fax: Handphone: Email:
Lift & Escalator Installation Sub-Contractor		Name: Position:	Tel: Fax: Handphone: Email:
Fire Fighting & Alarm Installation Sub-Contractor		Name: Position:	Tel: Fax: Handphone: Email:
Swimming Pool Filtration Plant Installation Sub-Contractor		Name: Position:	Tel: Fax: Handphone: Email:
Carpark System Installation Sub-Contractor		Name: Position:	Tel: Fax: Handphone: Email:
_____		Name: Position:	Tel: Fax: Handphone: Email:

** Type of Contract*
- *NSC (Nominated Sub-Contract)*
- *DSC (Domesticated Sub-Contract)*
- *DC (Direct Contract)*
- *NS (Nominated Supplier)*

3.6 Authorities

Authorities/Department	Contact Person	Tel/Fax Nos./E-mail
SP PowerGrid:		
(a) Sub-Station	Goh Liqing	liqing@spgroup.com.sg
(b) Diversion	Clovis Lim Jing jie Goh Chi Yang	clovislj@spgroup.com.sg gohchiyang@spgroup.com.sg
SP Services:		
(a) Customer Supply		
(b) Installation		
(c) Meter Section		
(d) Road Lighting		
TFCC:		
(a) SCV		
(b) SingTel		
(c) IDA		
BCA:		
(a) Building Plan		
(b) Green Mark		
FSSD:		
(a) Building Plan		
(b) M&E Plan		
PUB (Water Supply) Network Dept:		
(a) Water Conservation		
(b) Plumbing Plan		
(c) Diversion		
(d) NEWater		
PUB Water Reclamation (Network) Dept:		
(a) Building Plan/CBPU		
(b) M&E Plan		
(c) Diversion		
NEA (Pollution Control)		
(a) Planning/Submission		
(b) Inspection		

SECTION 4

PROGRAMME

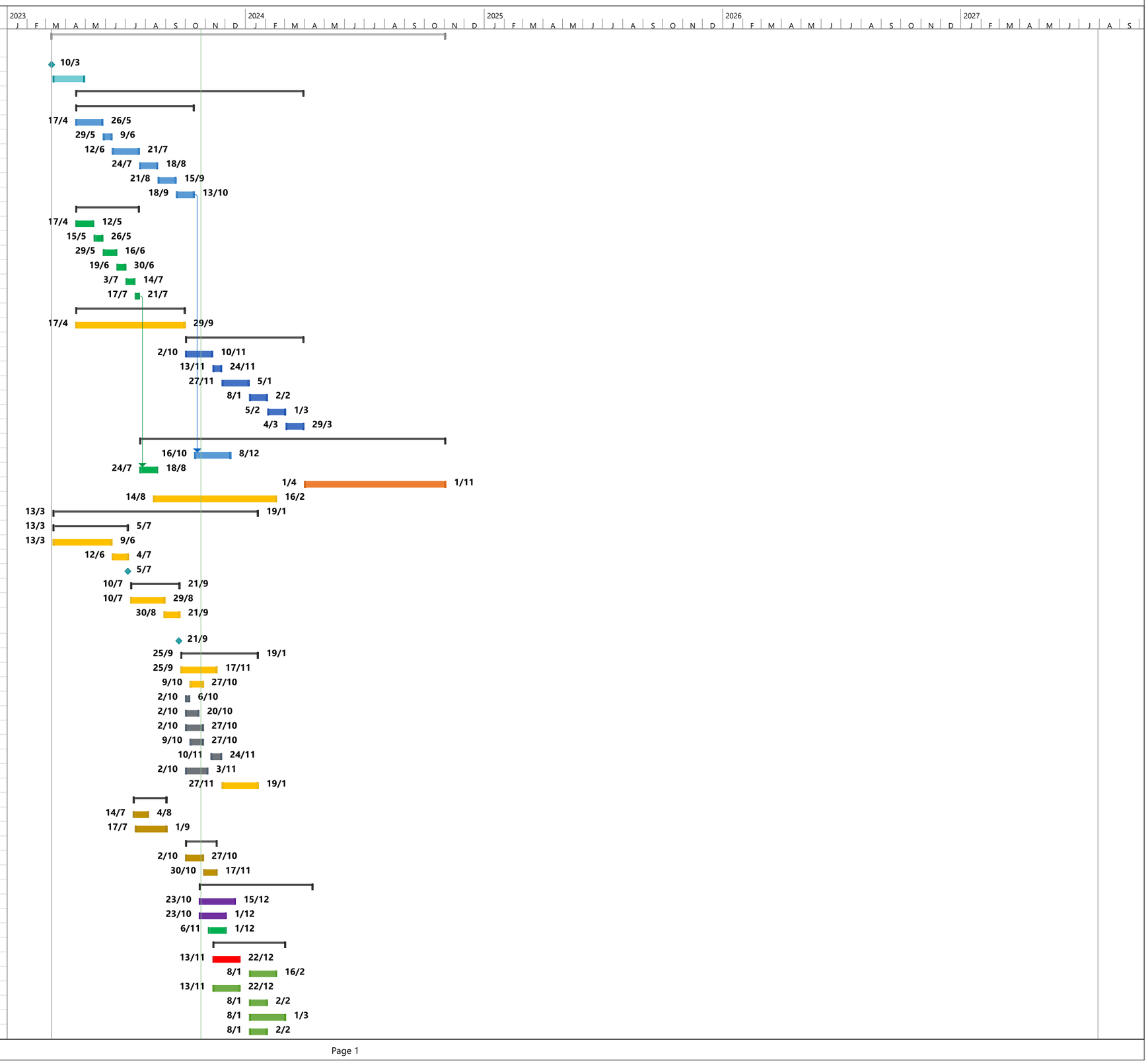
4.1 Overall Programme – Refer to the attachment

ID	TASK NAME	MONTHS	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1.	Preliminary Planning																									
2.	Planning Submission																									
3.	Detail Design																									
4.	BP Submission																									
5.	BP Submission (Amendments)																									
6.	Tender Period for Piling																									
7.	Tender Period for Sub-Structure																									
8.	Tender Period for Super-Structure																									
9.	Piling Period																									
10.	Sub-Structure Construction Period																									
11.	Super-Structure Construction Period																									
12.	TOP																									
13.	CSC																									

TAMAN JURONG POLYCLINIC
PRELIMINARY MERGED PROGRAMME

REV 8c.0
DATE: 25 October 2023

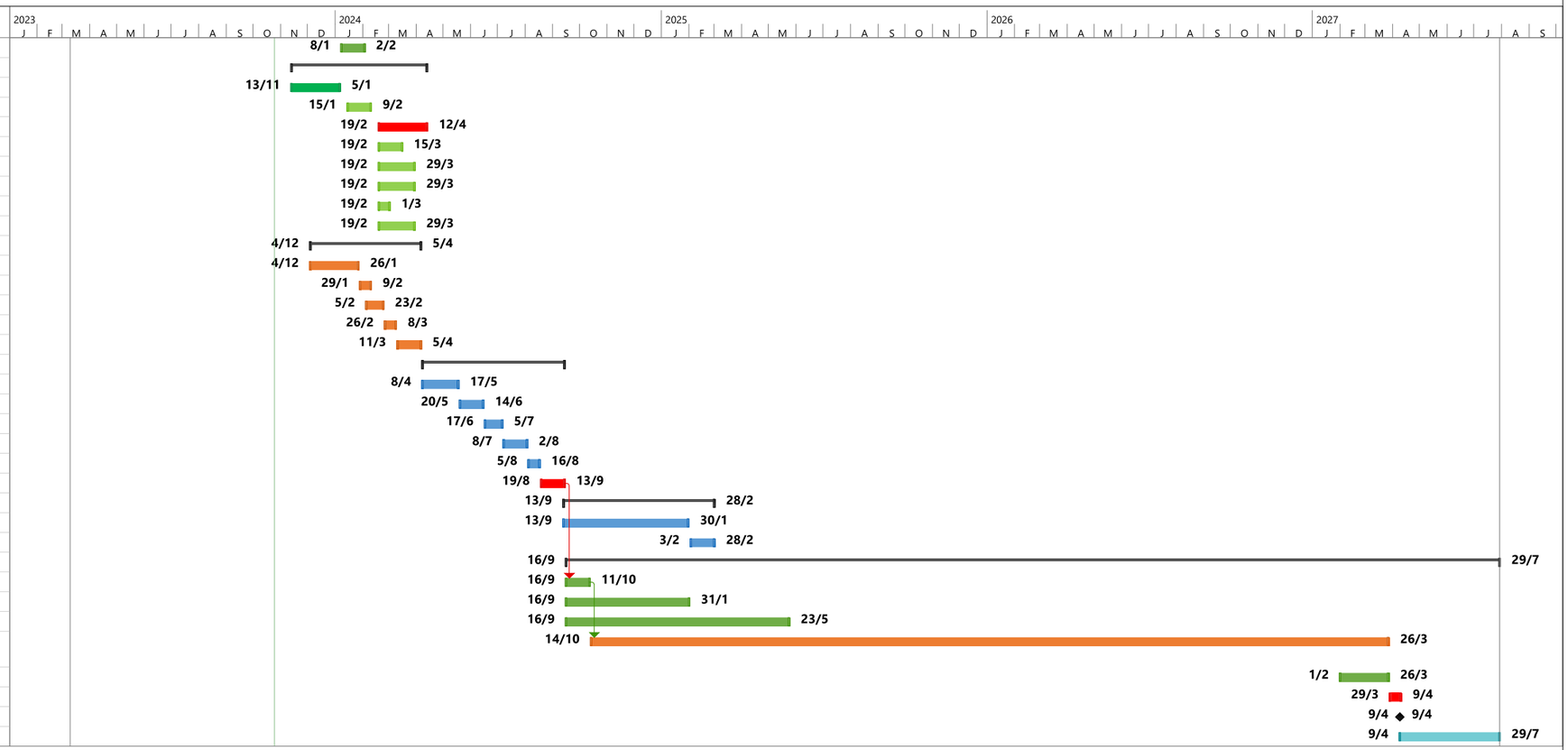
ID	Task Name	Duration	Start	Finish
1	**TMJPC_Forward Works_Prelim Programme_23052023**	**431 days**	**Fri 10/3/23**	**Fri 1/11/24**
1	Letter of Appointment	0 days	Fri 10/3/23	Fri 10/3/23
2	Purchase of SIP / DIP	35 days	Mon 13/3/23	Fri 28/4/23
3	**FORWARD CONTRACTS**	**250 days**	**Mon 17/4/23**	**Fri 29/3/24**
4	**FC-01a SOIL INVESTIGATION**	**130 days**	**Mon 17/4/23**	**Fri 13/10/23**
5	Tender documentation	30 days	Mon 17/4/23	Fri 26/5/23
6	Review and Approval by MOHH	10 days	Mon 29/5/23	Fri 9/6/23
7	Tender Calling	30 days	Mon 12/6/23	Fri 21/7/23
8	Tender Evaulation and Recommendation	20 days	Mon 24/7/23	Fri 18/8/23
9	Review by MOHH	20 days	Mon 21/8/23	Fri 15/9/23
10	Award	20 days	Mon 18/9/23	Fri 13/10/23
11	**FC-01b SERVICES DETECTION**	**70 days**	**Mon 17/4/23**	**Fri 21/7/23**
12	RFP documentation	20 days	Mon 17/4/23	Fri 12/5/23
13	Review and Approval by MOHH	10 days	Mon 15/5/23	Fri 26/5/23
14	RFP Calling	15 days	Mon 29/5/23	Fri 16/6/23
15	RFP Evaulation and Recommendation	10 days	Mon 19/6/23	Fri 30/6/23
16	Review by MOHH	10 days	Mon 3/7/23	Fri 14/7/23
17	Award	5 days	Mon 17/7/23	Fri 21/7/23
18	**FC-03 SERVICES DIVERSION QUOTATION**	**120 days**	**Mon 17/4/23**	**Fri 29/9/23**
19	Quotation Submission and Approval	120 days	Mon 17/4/23	Fri 29/9/23
20	**FC-04 INSTRUMENTATION & MONITORING**	**130 days**	**Mon 2/10/23**	**Fri 29/3/24**
21	Tender documentation	30 days	Mon 2/10/23	Fri 10/11/23
22	Review and Approval by MOHH	10 days	Mon 13/11/23	Fri 24/11/23
23	Tender Calling	30 days	Mon 27/11/23	Fri 5/1/24
24	Tender Evaulation and Recommendation	20 days	Mon 8/1/24	Fri 2/2/24
25	Review by MOHH	20 days	Mon 5/2/24	Fri 1/3/24
26	Award	20 days	Mon 4/3/24	Fri 29/3/24
27	**CONSTRUCTION**	**335 days**	**Mon 24/7/23**	**Fri 1/11/24**
28	FC-01a Soil Investigation Works	40 days	Mon 16/10/23	Fri 8/12/23
29	FC-01b Services Detection Works	20 days	Mon 24/7/23	Fri 18/8/23
30	FC-02 Hoarding & Demolition Works	155 days	Mon 1/4/24	Fri 1/11/24
31	FC-03 Services Diversion [By Service Provider]	135 days	Mon 14/8/23	Fri 16/2/24
2	**DESIGN**	**225 days**	**Mon 13/3/23**	**Fri 19/1/24**
3	**CONCEPT DESIGN**	**82 days**	**Mon 13/3/23**	**Wed 5/7/23**
4	DR1 - Concept Design Review 1	13 wks	Mon 13/3/23	Fri 9/6/23
5	MR 1 - Concept Design Management Review 1	3.4 wks	Mon 12/6/23	Tue 4/7/23
6	Concept Design Sign-off	0 wks	Wed 5/7/23	Wed 5/7/23
7	**SCHEMATIC DESIGN**	**54 days**	**Mon 10/7/23**	**Thu 21/9/23**
8	DR 2 - Schematic Design Review	7.4 wks	Mon 10/7/23	Tue 29/8/23
9	MR 2 - Schematic Design Review 2 and Façade Design Presentation'	3.4 wks	Wed 30/8/23	Thu 21/9/23
10	Schematic Design Sign-off	0 wks	Thu 21/9/23	Thu 21/9/23
11	**DETAILED DESIGN**	**85 days**	**Mon 25/9/23**	**Fri 19/1/24**
12	DR 3 - Detailed Design Review	8 wks	Mon 25/9/23	Fri 17/11/23
13	Greenmark Platinum	15 days	Mon 9/10/23	Fri 27/10/23
14	*Design for Safety (Guide 1)*	5 days	Mon 2/10/23	Fri 6/10/23
15	*Prelim Acoustic Study*	15 days	Mon 2/10/23	Fri 20/10/23
16	*Wind Driven Rain Study*	20 days	Mon 2/10/23	Fri 27/10/23
17	*Design for Maintainability*	15 days	Mon 9/10/23	Fri 27/10/23
18	*BIM Walkthrough*	*11 days*	*Fri 10/11/23*	*Fri 24/11/23*
19	*Universal Design and Buildability Score*	25 days	Mon 2/10/23	Fri 3/11/23
20	DR 4 - Detailed Design Review	8 wks	Mon 27/11/23	Fri 19/1/24
21	**User Group Engagements (UGM 1)**	**36 days**	**Fri 14/7/23**	**Fri 1/9/23**
22	NUP User Group Meetings	16 days	Fri 14/7/23	Fri 4/8/23
23	Review, Clarification and Consolidation of Information	35 days	Mon 17/7/23	Fri 1/9/23
24	**User Group Engagements (UGM 2)**	**35 days**	**Mon 2/10/23**	**Fri 17/11/23**
25	NUP User Group Meetings	20 days	Mon 2/10/23	Fri 27/10/23
26	Review, Clarification and Consolidation of Information	15 days	Mon 30/10/23	Fri 17/11/23
27	**Authorities Submission & Engagement**	**125 days**	**Mon 23/10/23**	**Fri 12/4/24**
28	Engagement with National Heritage Board	40 days	Mon 23/10/23	Fri 15/12/23
29	Engagement with Ministry of Education / HDB	6 wks	Mon 23/10/23	Fri 1/12/23
30	Preparation of Authorities Submission Drawings	4 wks	Mon 6/11/23	Fri 1/12/23
31	**Planning Submission**	**80 days**	**Mon 13/11/23**	**Fri 1/3/24**
32	**URA (PP)**	**6 wks**	**Mon 13/11/23**	**Fri 22/12/23**
33	URA (WP)	6 wks	Mon 8/1/24	Fri 16/2/24
34	NPARKS	6 wks	Mon 13/11/23	Fri 22/12/23
35	LTA (Roads)	4 wks	Mon 8/1/24	Fri 2/2/24
36	LTA (Vehicle Parking)	8 wks	Mon 8/1/24	Fri 1/3/24
37	CBPU - NEA	4 wks	Mon 8/1/24	Fri 2/2/24



TAMAN JURONG POLYCLINIC
PRELIMINARY MERGED PROGRAMME

REV 8c.0
DATE: 25 October 2023

ID	Task Name	Duration	Start	Finish
38	CBPU - PUB	4 wks	Mon 8/1/24	Fri 2/2/24
39	**Building Plan**	**110 days**	**Mon 13/11/23**	**Fri 12/4/24**
40	Appointment of AC Checker	8 wks	Mon 13/11/23	Fri 5/1/24
41	BCA ST	4 wks	Mon 15/1/24	Fri 9/2/24
42	BCA BP	8 wks	Mon 19/2/24	Fri 12/4/24
43	FSSD	4 wks	Mon 19/2/24	Fri 15/3/24
44	CBPU (EHD)	6 wks	Mon 19/2/24	Fri 29/3/24
45	CBPU (Drainage)	6 wks	Mon 19/2/24	Fri 29/3/24
46	IRAS	2 wks	Mon 19/2/24	Fri 1/3/24
47	HDB	6 wks	Mon 19/2/24	Fri 29/3/24
48	**PRE-CONSTRUCTION TENDER**	**90 days**	**Mon 4/12/23**	**Fri 5/4/24**
49	Tender Documentation	8 wks	Mon 4/12/23	Fri 26/1/24
50	Pre-Tender Estimate	2 wks	Mon 29/1/24	Fri 9/2/24
51	Value Engineering	3 wks	Mon 5/2/24	Fri 23/2/24
52	Revised tender estimate	2 wks	Mon 26/2/24	Fri 8/3/24
53	Update Tender Documentation (Docs to PCD & Legal)	4 wks	Mon 11/3/24	Fri 5/4/24
54	**MAIN CONTRACT TENDER**	**115 days**	**Mon 8/4/24**	**Fri 13/9/24**
55	Tender Period	30 days	Mon 8/4/24	Fri 17/5/24
56	Evaluation of the Tender documents	4 wks	Mon 20/5/24	Fri 14/6/24
57	Briefing to TEC on Quality Score	3 wks	Mon 17/6/24	Fri 5/7/24
58	Tender Recommendation Report (TRR)	4 wks	Mon 8/7/24	Fri 2/8/24
59	Draft Letter of Acceptance (LOA)	2 wks	Mon 5/8/24	Fri 16/8/24
60	**Award of Contract**	**4 wks**	**Mon 19/8/24**	**Fri 13/9/24**
61	**POST AWARD**	**121 days**	**Fri 13/9/24**	**Fri 28/2/25**
62	Contract Compilation	5 mons	Fri 13/9/24	Thu 30/1/25
63	Signing of Contract	4 wks	Mon 3/2/25	Fri 28/2/25
64	**CONSTRUCTION**	**749 days**	**Mon 16/9/24**	**Thu 29/7/27**
65	Mobilisation	20 days	Mon 16/9/24	Fri 11/10/24
66	Material Presentations	5 mons	Mon 16/9/24	Fri 31/1/25
67	Mock-Ups	9 mons	Mon 16/9/24	Fri 23/5/25
68	Construction (Hoarding/Demo, Piling, Basement, Superstructure)	32 mons	**Mon 14/10/24**	Fri 26/3/27
69	Ready for TOP	8 wks	Mon 1/2/27	Fri 26/3/27
70	**TOP**	**2 wks**	**Mon 29/3/27**	**Fri 9/4/27**
71	Contract Completion	0 days	Fri 9/4/27	Fri 9/4/27
72	Fit-Out to Opening	4 mons	Fri 9/4/27	Thu 29/7/27



SECTION 4

PROGRAMME

4.2 Authority Submission Status for M&E Services - 1st Submission

Service	Authority	Original Submission		Comments/Resubmission						Approval/
		Scheduled	Actual	Comment	Resubmit	Comment	Resubmit	Comment	Resubmit	Clearance
Application for Electricity Supply	SP Services Ltd	30-Jun-23	19-Jun-23	26-Jul-23	28-Jul-23	31-Aug-23	11-Oct-23	15-Oct-23	6-Dec-23	
Power Supply Substation	SP PowerGrid Ltd	1 month approval of CS1								
Metering Layout	SP Services Ltd	N.A								
Sanitary Installation	PUB Water Reclamation (Network) Dept	29-Mar-24								
Domestic Water Supply	PUB (Water Supply) Network Dept	29-Feb-24								
Air Conditioning & Ventilation Inst.	FSSD	3 months upon Archi SCDF approval								
Fire Fighting & Alarm Installation	FSSD	2 months upon Archi SCDF approval								
Telephone Installation	TFCC	15-Mar-24								
Broadband Co-axial Cable System (BCS)	Starhub Cable Vision									
	NEA (Pollution Control)									

SECTION 4

PROGRAMME

4.3 Authority Submission Status for M&E Services (Amendments) - 2nd Submission - NOT APPLICABLE

Service	Authority	Original Submission		Comments/Resubmission						Approval/
		Scheduled	Actual	Comment	Resubmit	Comment	Resubmit	Comment	Resubmit	Clearance
Application for Electricity Supply	SP Services Ltd									
Power Supply Substation	SP PowerGrid Ltd									
Metering Layout	SP Services Ltd									
Sanitary Installation	PUB Water Reclamation (Network) Dept									
Domestic Water Supply	PUB (Water Supply) Network Dept									
Air Conditioning & Ventilation Inst.	FSSD									
Fire Fighting & Alarm Installation	FSSD									
Telephone Installation	TFCC									
Broadband Co-axial Cable System (BCS)	Starhub Cable Vision									
	NEA (Pollution Control)									

SECTION 5

PROJECT RECORDS

5.1 List of Internal Files

Standard Files

File Ref:		File Ref:	
- Owner	✓	- Architect	✓
- Authorities	✓	- Other Consultants	✓
- Contractors		- CC	
- CF		- PQP/QSP	✓

Project Files to be initiated by PM as and when required

File Ref:		File Ref:		File Ref:	
- EC/MC					

(✓*where applicable*)

SECTION 5

PROJECT RECORDS

5.2 Filing of Drawings

The following team members shall take charge of filing of drawings, stamping "SUPERSEDED" drawings, etc.

Description	Team Member
Incoming Architectural Floor Plans	Saved in the server
Incoming Architectural Sketches/Details	Saved in the server
Incoming Structural Drawings	Saved in the server
M&E Drawings	
- Electrical Installation	Saved in the server
- Lift Installation	Saved in the server
- Air Conditioning & Ventilation Installation	Saved in the server
- Fire Fighting & Alarm Installation	Saved in the server
- Plumbing & Sanitary Installation	Saved in the server
- Swimming Pool & Filtration Installation	NA
Other Drawings	

SECTION 6

INTERFACING

6.1 Method of Interface

Description	Method of Interface	
Client's Review & Approval	M&E Design Report	✓
	Pre-planned meeting at fixed intervals	✓
	Telephone	✓
	Email	✓
Interface With External Design Teams	M&E Design Report	✓
	Pre-planned meeting at fixed intervals	✓
	Telephone	✓
	Email	✓
Interface Between Internal Design Teams	Telephone	✓
	Email	✓
	Internal Project Team Meeting	✓
	Circulation of Information	✓

(✓*where applicable*)

SECTION 6

INTERFACING

6.2 Internal Design Interface

Item No.	Description*	Required From	Required By	Date Required	Remarks
1	Equipment load				

** Information required by INTERNAL DESIGN TEAM MEMBERS*

SECTION 6

INTERFACING

6.3 Circulation of Documents to External Parties

	Code: A - Approval Required C - For Comments I - For Information Only	Client/ Client Rep.	* Client's Project Manager	Architect	Structural Engineer	Quantity Surveyor	
1.	**Letters:**						
a.	Project Design	A	I	C	C	I	
b.	Project Administration	-	-	-	-	-	
c.	Project Cost Estimate/Contract Cost	A	I	I	-	C	
2.	**Drawings**						
a.	Outline Design Drgs.	A	I	C	I	-	
b.	Sketch Design Drgs.	A	I	C	I	-	
c.	Final Design Drgs.	A	I	C	C	I	
d.	Shop Drawings	C	I	C	I	-	
e.	As Built Drgs.	I	I	I	I	I	
3.	**Other Document**						
a.	Specification	A	I	I	-	I	
b.	Tender Document	A	I	I	-	I	
c.	Tender Evaluation Report	A	I	I	-	I	
d.	Design Report	A	I	I	I	-	
e.	Progress Report	-	-	-	-	-	
f.	Financial Report	-	-	-	-	-	
g.	Minutes of Meeting	I	I	I	-	I	
h.	Inspection Report	I	I	I	-	-	
i.	Testing & Comm. Report	I	I	-	-	-	
j.	O & M Manual	I	I	-	-	-	

*Note: Applicable only, if the client engaged a Project Manager.

SECTION 7

WORK AUTHORISATION

Activity \ Authorised Signatories	PD	QP	PM	AE	SS
General Correspondences with Client			√	√	
General Correspondences with Other Consultants			√	√	
M&E Cost Estimate Report	√	√	√		
M&E Design Report	√	√	√		
Check Prints		√			
Tender Drawing Approval	√	√	√		
Tender Specification Approval	√	√	√		
List of Tenderers	√	√	√		
Tender Questionnaires	√	√	√		
Tender Reports	√	√	√		
Draft Letter of Award	√	√	√		
Review of Contractor's Shop Drawing			√	√	
Review of Contractor's Technical Submittal			√	√	
Review of Contractor's Sample Submittal			√	√	
Contractor's Request for Deviation		√	√		
Progress Payment Valuation Form	√		√		
Final Account Valuation	√		√		
Draft Variation Order	√		√		
Engineer/Architect's Instruction/Direction	√		√		
Site Instruction/Direction			√		
Correspondence/Submission to Authorities	√	√			

(✓*where authorised*)

Key to abbreviations:-

PD : Project Director
QP : Qualified Person
PM : Project Manager/Assistant Project Manager
AE : Assistant Engineer
SS : ACEPL Site Staff

SECTION 8

DESIGN INPUT & METHODOLOGY

8.1 List of Client's Standards, Reference Documents or Brief

ITEM	KEPT BY
Green Frontier Checklist	Soft Copy saved in Server
MOHH Enhanced Specs for Hubless Cast Iron Pipes	
IT Infrastructure Checklist (Design Requirement)	
IT Infrastructure Checklist (Infrastructure Requirement)	
Design for Maintainability Checklist	
Project Brief (MEP Design Guide)	
Lift Specification Enhancement	
Request for Approval to Order Variation	
Facility Guidelines for Polyclinics	
MEP Design Guide for Polyclinics	
MEP Design Guide Checklist for Polyclinics	
Physical Security Standards for Healthcare Institutions in Singapore	
IT Infrastructure Specifications for Polyclinics and Redevelopment Project	
Façade Access Design Guide	
Enhanced design for Maintainability Checklist	
Procedure for Design Review on Design for Maintainability	
Wayfinding Guidelines for Healthcare Facilities	

8.2 List of Applicable Code of Practice and Regulations

Services	Title of Code of Practice/Standard
Electrical Wiring	SS 638 : 2018
Lightning Protection System	SS 555 : 2018
Emergency Voice Communication System	SS 546 : 2022
Air Conditioning & Ventilation Installation	SS 553 : 2016
Lift & Escalator Installation	SS 550 : 2020
Sprinkler System	SS CP 52 : 2004
Wet Riser System	SS 575 : 2012
Automatic Fire Alarm System	SS 645 : 2019
Sanitary System	Code of Practice on Sewerage & Sanitary Works 2019
Plumbing System	SS 636 : 2018
Town Gas/LPG Supply System	
Boiler and Steam Supply System	
Mechanical Smoke Control System	

SECTION 8

DESIGN INPUT & METHODOLOGY

8.3 List of Design Guide or Handbook Used

Carrier's Handbook of Air Conditioning System Design

ASHRAE Handbooks

Institute of Plumbing's Plumbing Services Design Guide

8.4 List of Pre-Consultation and Waiver – NOT APPLICABLE

S/N	Description	Date of Application	Date of Approval	Remarks
1	*Clause number in Code of Practice for (Services) which require clarification or waiver. Consultation Ref No. Waiver Ref. No.			
2	*Clause number in Code of Practice for (Services) which require clarification or waiver. Consultation Ref No. Waiver Ref. No.			
3	*Clause number in Code of Practice for (Services) which require clarification or waiver. Consultation Ref No. Waiver Ref. No.			

*To fill in actual information

8.5 List of Applicable Quality System Procedures

Alpha Consulting Engineers Pte Ltd's Quality Management System Procedures

Section	Title	✓ where applicable
M1	Preparation of Consultancy Offer	✓
M2	Project Commissioning and Service Agreement	✓
M3	Design Control	✓
M4	Design Change Control	✓
M5	Tender Process and Evaluation	✓
M6	Authority Submission	✓
M7	Construction Process Control	✓
M8	Testing and Commissioning	✓
S1	Document Control	✓
S2	Documentation of Quality & Environmental Management System Procedure	✓
S3	Documentation of Project Quality Plan	✓
S4	Specification Control	✓
S5	Library Control	
S6	Archive Control	✓
S7	Filing Control	✓
S8	Drawing Control	✓
S9	Administration Control	✓
S10	Purchasing Control	
S11	Training Control	
S12	Computer Control	
S13	Non-Conformity and Corrective Action Procedures	✓
S14	Quality & Environmental System Audit	✓
S15	Feedback Reporting	✓
S16	Clients Feedback	✓
S17	Management Review	✓
S18	Risk Identification, Assessment & Control	✓

8.6 List of Software Used For Design/Analysis

DESCRIPTION/ PACKAGE NAME	VERSION	SUPPLIER/ SOURCE	PURPOSE	
Cophos	3.31	Zumtobel	Lighting design	
Carrier E20-II	3.21	Carrier	Programme for determination of heat load, duct size and its losses, etc.	✓
Gensize 2	2.1	Onan	Generator sizing	
Hyena	4.00.1	ACADS-BSG	Fire Sprinkler & Hydrant Analysis	
Dialux	4.11	Freeware	Lighting design	
Lift Traffic	7.18	Elevate	Lift traffic calculation	✓
Fault Level Calculation	11.11	ETAP	Calculation of fault level and voltage drop	

(✓*where applicable*)

SECTION 9

ENVIRONMENTAL CONSIDERATIONS

9.1 Sustainable Design Features / Criteria

Item	Remarks
Green Mark criteria	Platinum SLEB
Green Design Features	Installation of Solar PV System on roof

9.2 Site PPE Requirement – NOT APPLICABLE

The necessary Personal Protective Equipment (detailed below) shall be provided by the main contractor/Company in accordance to the site EHS requirements prior to the site monitoring.

PPE	✓ where applicable
Safety Helmet	
Safety Shoes	
Eye Protection	
Ear Protection	
Safety Harness / Belt	
Others:	

9.3 Site Emergency Preparedness – NOT APPLICABLE

Site staff shall comply with the site emergency preparedness and response procedure, established by the main contractor/owner, which shall include the following details.

Items	✓ where applicable
Evacuation Route	
Emergency Exit	
Assembly Point	
Emergency Contact List / Person	
Alarm system / methods	

SECTION 9

ENVIRONMENTAL CONSIDERATIONS

9.4 Reporting of Environmental Non-conformances

When encountering environmental non-conformances, Site Staff shall be responsible to feedback to the main contractor.

9.5 List of Applicable Environmental management system Procedures – Not Applicable

Alpha Consulting Engineers Pte Ltd's Environmental Management System Procedures

Section	Title	✓ where applicable
E1	Aspect / Impact Identification, Risk Assessment & Risk Control	
E2	Identifying Legal & Other Requirements	
E3	Objectives, Targets & Programmes	
E4	Communication	
E5	Emergency Preparedness & Response	
E6	Monitoring & Measurement	
E7	Control of Air & Noise Pollution	
E8	Management of Wastes	

SECTION 10

CLIENT'S REQUIREMENTS

10.1 List of Output Required by Client:-

Item	* Remarks
M&E Design Report	A
M&E Cost Estimate Report	A
Pre-Qualification of Tenderers	NA
Tender Documents	A
Tender Report	A
Payment Valuation for QS	A
Certificates of Supervision for TOP/CSC	I

* *Remarks*

A: for approval *C: for comment* *I: for Information* *Re: for record*

Other purposes and for action: please specify.

10.2 Specific Procedures Required By Client *(If applicable)*

SECTION 11

LIST OF SUB-JOB

11.1 List of Sub-Job Numbers

Sub Job No	Description	Allocation Details